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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,646	12/31/2003	Wenguang Li	066243-0243 (141218)	9408
33679 7590 11/15/2010 GE MEDICAL SYSTEM C/O FOLEY & LARDNER LLP 777 EAST WISCONSIN AVENUE MILWAUKEE, WI 53202-5306			EXAMINER LARYEA, LAWRENCE N	
			ART UNIT 3768	PAPER NUMBER
			MAIL DATE 11/15/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/749,646

Applicant(s)

LI ET AL.

Examiner

LAWRENCE N. LARYEA

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed 09/03/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims **8 and 10-19** are pending. The Examiner acknowledges the amendments to **Claims 8, 15, 16 and 19**.

Rejections Withdrawn

2. The rejection under 35 U.S.C. 112, second paragraph and prior art rejections set forth in the previous office action dated 6/22/2010 have been withdrawn. See current ground(s) of 103 rejection with additional prior art in current office action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: There no description of numeral 232 in figure 6 in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 8,10,11,13-16 and 18-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Darrow et al (US Patent 5,577,502, Nov. 26, 1996)** in view of **Epstein (US Patent 5,997,883, Dec. 7, 1999)** and further view of **Verad et al (U.S. Patent No. 7,697,972, Apr.13, 2010)**

6. **Darrow et al** teach a Medical procedures method wherein simultaneously displaying the image and a representation of a probe, the image and the representation of the probe corresponding to substantially the same point (corresponding to the point of the displayed with the periodic motion) in a bodily cycle (See **Col. 2, lines25-28, Col. 5, lines 1-9, Col. 6, lines 20-67**) , however **Darrow et al** does not teach that the MR image (See **Col. 3, lines 28-39**) is generated by interpolating between or extrapolating from the first and second images to generate at least one interpolated or extrapolated

image of the organ or structure inside the body which is correlated to a point in the body cycle that is different than the point in the body cycle of the first and second images.

7. **Epstein** teach a medical images acquisition method comprising an image being generated by interpolating between images of the organ or structure taken at other points of the bodily cycle (See Col.8, lines 34-42, Col.2, lines 27-47, Col.3, lines 49-67, Col.4, lines 1-67; Col.5, lines 1-12) in order to account for variations leading to better resolution image during cardiac procedures since images acquired at cardiac procedures often exhibit blurring or ghosting artifacts. (See Col. 1, lines 59-67and (Col. 2, lines 27-39)

8. It would have been obvious to one having ordinary skill in the art at the time invention was made to modify of medical procedures method of **Darrow et al** wherein an image being generated by interpolating between or extrapolating from the first and second images to generate at least one interpolated or extrapolated image of the organ or structure inside the body which is correlated to a point in the body cycle that is different than the point in the body cycle of the first and second images (See Col.8,lines 34-42, Col.2,lines 27-47, Col.3, lines 49-67, Col.4,lines 1-67; Col.5,lines 1-12) in order to account for variations leading to better resolution image during cardiac procedures since images acquired at cardiac procedures often exhibit blurring or ghosting artifacts. (See Col. 1, lines 59-67and (Col. 2, lines 27-39) as taught by **Darrow et al**.

9. **Darrow et al** and **Epstein** teach the claimed invention including **cardiac imaging gating** (See Col.6, lines 20-24 of **Darrow et al**) see rejection *supra*. Further,

Darrow et al teaches a method of tracking a device (probe) during a periodic motion (col. 3, lines 34-38). The device location is tracked and is displayed superimposed with a diagnostic image (col. 3, lines 34-38), which reads on acquiring multiple locations of the probe. However, **Darrow et al and Epstein** do not **expressly** teach that the multiple locations of the probe are acquired at a recurring time that corresponds to the point of the bodily cycle.

10. Verad et al teach a Cardiac Navigation system which includes registering an image with a probe (**See Paragraph [0144]**) and further teach that registration may also be gated at the same event during the heart cycle to optimize the registration accuracy (**See Paragraph [0144]**).

It would have been obvious to one having ordinary skill in the art at the time invention was made to modify of Cardiac Medical procedures method of **Darrow et al** and **Epstein** wherein registering a representation of the probe comprises acquiring multiple locations of the probe at a recurring time that corresponds to the point of the bodily cycle and using the location of the probe to display the representation of the probe at the recurring point in the bodily cycle in order to optimize the registration accuracy as taught by **Verad et al**.

11. Claims 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Darrow et al in view of Epstein and Verad et al** as applied to claims 8 and 15, and further view of **Packer et al (US Patent 6,556,695, April 29, 2003)**.

12. **Darrow et al** , **Epstein** and **Verad et al** teach the claimed invention see rejection supra, however **Darrow et al** , **Epstein** and **Verad et al** do not teach the including displaying a map electrical properties of the heart.

13. **Packer et al** teach a cardiac medical procedures method including displaying a map of electrical properties of the heart is overlaid on anatomical image in order to guide physician during medical imaging and ablating in real-time (**See Col.12, lines 51; Col.13, lines 1-29, Col.7, lines 24-34**).

It would have been obvious to one having ordinary skill in the art at the time invention was made to modify of medical procedures method of **Darrow et al, Epstein and Verad et al, including** displaying a map of electrical properties of the heart is overlaid on anatomical image and the probe in order to guide physician during medical imaging and ablating in real-time (**See Col.1, lines1-14**) as taught by **Packer et al**.

Response to Arguments

14. Applicant's arguments with respect to claims 8 and 10-19 have been considered but are moot in view of the new ground(s) of rejection. However, the following arguments have been addressed as they may apply to the current grounds of rejection.

15. It is clear that "Epstein does not teach or suggest registering a representation of the probe comprises acquiring multiple locations of the probe at a recurring time that corresponds to the point the bodily cycle and using the location of the probe to display the representation of the probe at the recurring point in the bodily cycle."

16. Examiner relies on **Epstein** to show that during MRI Cardiac Cycle Medical Procedures a user could acquire interested image by interpolating between images of the organ at a point or other points of the bodily cycle in order to account for variations leading to better resolution image during cardiac procedures since images acquired at cardiac procedures often exhibit blurring or ghosting artifacts.

In view of the foregoing response to arguments, the rejection of claims 8,10-19 under 35 U.S.C. 103(a) as being unpatentable over Darrow et al , Epstein and Verad et al and further view of Packer et al has been maintained.

Conclusion

Claims 8 and 10-19 are rejected and none of claims are allowed.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE N. LARYEA whose telephone number is (571)272-9060. The examiner can normally be reached on 9:30 a.m.-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LNL

/Unsu Jung/
Primary Examiner, Art Unit 3768